Remarks

Claims 6-9, 11-16, 18, 19, 26-29, 32-37 are pending in the present application. Reconsideration of the claims is requested in view of the requested amendments and the following remarks. By this amendment, claims 1-5, 10, 17, 20-25, 30, 31, and 38 have been cancelled. Applicants reserve the right to file continuing applications directed to these claims.

I. Objection to Claims 21 and 22

Claims 21 and 22 have been cancelled. Thus, the objection to these claims is moot.

II. 35 U.S.C. § 112 Rejection of Claims 2, 6, 7, 9, 10, 12, 13, 15-19, 22, 23, and 30-37

Claims 2, 6, 7, 9, 10, 12, 13, 15-19, 22, 23, and 30-37 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Applicants traverse this rejection.

In claim 6, the preamble does not recite "a semiconductor wafer". Thus, claim 6 in its current form is not indefinite and the rejection of claim 6 should withdrawn.

In claim 7, the phrase "inert to the liquid solvent" has been amended to recite "inert with respect to the liquid solvent".

In claims 9, 12, 13, and 15, the word "further" has been inserted before the word "including".

Claim 6, which has been rewritten to include all of the limitations of original claim 10, recites the phrase "a dew point of the liquid solvent in the reactant mixture to facilitate the formation of the film of the reactant mixture on the surface of the wafer." Claim 16, which has been rewritten to include all of the limitations of claim 17, recites the phrase "a dew point of the liquid solvent in the reactant mixture to facilitate the formation of the film on the surface of the

wafer." Applicants believe that claims 6 and 16 as currently amended address the Examiner's rejection of original claims 10 and 17.

Claims 16, 32, and 37 have been amended to delete the word "thin".

Claims 2, 22, 23, 30, 31, and 38 have been cancelled. Thus, the rejection of these claims is moot.

III. 35 U.S.C. § 102(b) Rejection of Claims 1-3, 6, 7, 9, 11-16, 18, 20-27, 30-32, 34, 37, and 38

Claims 1-3, 6, 7, 9, 11-16, 18, 20-27, 30-32, 34, 37, and 38 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 6,267,125 to Bergman et al., (Bergman). Applicants traverse this rejection and request that it be withdrawn.

Claim 6 is allowable because Bergman neither teaches nor suggests *cooling* a wafer to a temperature equal to or less than about a dew point of a liquid solvent in a reactant mixture to facilitate the formation of the film of the reactant mixture on the surface of the wafer, as recited in amended claim 6.

Bergman actually teaches away from cooling a semiconductor workpiece prior to introducing solvent into the chamber. Specifically, Bergman teaches *heating* the workpiece to an elevated temperature to accelerate reaction kinetics at the surface of the workpiece. See Bergman, col. 5, lines 13-17. To maintain the workpiece at an elevated temperature, Bergman teaches directly heating the workpiece using heating elements in the chamber (col. 5, lines 17-25) or a UV lamp positioned to irradiate the workpiece (col. 7, lines 10-15 and FIG. 6). Bergman's teaching of heating a workpiece runs directly counter to the claimed invention.

Accordingly, for at least the foregoing reasons, claim 6 is neither anticipated nor rendered obvious by Bergman and is allowable.

Claims 7 and 9 depend from claim 6 and are allowable for the reasons given above in support of claim 6 and additionally because each dependent claim sets forth an independently patentable combination of features.

Claim 11 recites "condensing a liquid solvent onto a surface of the wafer". There is no disclosure in Bergman for *condensing* a liquid solvent on a wafer surface. In FIGS. 1-4 and 6, Bergman discloses spraying water (in liquid form) through nozzles 40 into a chamber to form a liquid layer on a workpiece. Because the water is not vaporized, the liquid is not later condensed, as recited in claim 11.

Although FIG. 5 of Bergman discloses a steam generator for supplying saturated steam to the process chamber, there is no indication that a liquid layer is formed on the surface of the workpiece. Condensing a vapor can be achieved by either increasing the pressure and/or decreasing the temperature, e.g., cooling the wafer. There is no teaching or suggestion in Bergman to increase the pressure within the chamber or to cool the workpiece so as to form a liquid layer on the surface of the workpiece. Further, as noted above, Bergman actually teaches away from forming such a layer by specifically teaching *heating* the workpiece.

Accordingly, claim 11 is neither anticipated nor rendered obvious by Bergman and is allowable.

Claims 12 and 13 depend from claim 11 and are allowable for the reasons given above in support of claim 11 and additionally because each dependent claim sets forth an independently patentable combination of features.

Claim 14 is allowable because Bergman neither teaches nor suggests vaporizing a liquid solvent and then condensing the solvent to form a film on the surface of a wafer, as recited in claim 14.

Claim 15 depends from claim 14 and is allowable for the same reasons that claim 14 is allowable and because claim 15 further recites cooling the vaporized liquid solvent to facilitate condensation of the vaporized liquid solvent on the surface of the wafer.

Claim 16 is allowable because Bergman neither teaches nor suggests cooling a wafer to a temperature equal to or less than about a dew point of a liquid solvent, as recited in amended claim 16.

Claim 18 depends from claim 16 and is allowable for the reasons given above in support of claim 16 and additionally because claim 18 sets forth an independently patentable combination of features.

Claim 26 is allowable because Bergman neither teaches nor suggests controlling the temperature at or near a wafer surface so that the temperature at or near the wafer surface is less than the temperature of a showering liquid solvent, as recited in amended claim 26.

Claim 27 depends from claim 26 and is allowable for the reasons given above in support of claim 26 and additionally because claim 27 sets forth an independently patentable combination of features.

Claim 32 is allowable because Bergman neither teaches nor suggests cooling a wafer, as recited in amended claim 32.

Claim 34 depends from claim 32 and is allowable for the reasons given above in support of claim 32 and additionally because claim 34 sets forth an independently patentable combination of features.

Claim 37 is allowable because Bergman neither teaches nor suggests vaporizing a mixture of water and ozone gas and condensing a layer of the mixture on a wafer surface, as recited in claim 37.

Claims 1-3, 20-25, 30, 31, and 38 are cancelled. Thus, the rejection of these claims are moot.

IV. 35 U.S.C. § 103(a) Rejection of Claims 4, 5, 8, 10, 17, 19, 28, 29, 33, 35, and 36

Claims 4, 5, 8, 10, 17, 19, 28, 29, 33, 35, and 36 stand rejected under 35 U.S.C. § 103(a) as allegedly being obvious from Bergman. Applicants traverse this rejection and request that it be withdrawn.

Claims 4 and 5 are cancelled. Thus, the rejection of these claims are moot.

Claim 8 depends from claim 6 and is allowable along with its parent claim and because claim 8 is independently patentable.

Claims 10 and 17 were combined with their respective parent claims and are allowable for the reasons discussed above.

Claim 19 depends from claim 16 and is allowable along with its parent claim and because claim 19 is independently patentable.

Claims 28 and 29 depend from claim 26 and are allowable for the reasons given above in support of claim 26 and because each dependent claim sets forth an independently patentable combination of features. For example, Bergman neither teaches nor suggests showering a liquid solvent and reactant gas onto a wafer surface, wherein the wafer is at a temperature equal to about 25 °C and the liquid solvent is at a temperature equal to about 90 °C, as recited in claim 28.

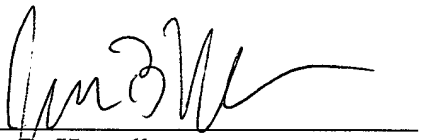
Claims 33, 35, and 36 depend from claim 32 and are allowable for the reasons given above in support of claim 32 and because each dependent claim sets forth an independently patentable combination of features.

V. Conclusion

The present application is in condition for allowance and such action is respectfully requested. If any further issues remain concerning this application, the Examiner is requested to call the undersigned to discuss such matters.

Respectfully submitted,

KLARQUIST SPARKMAN, LLP

By 

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